

I CLAIM:

1. A method of controlling movement of a cursor on a display screen in response to an external force applied by a user, the method comprising:

5 a) providing a plurality of switch contacts in a pointing device, the switch contacts including a set of direction contacts that are electrically isolated from each other and that respectively have an associated direction, and a common contact unit that is electrically
10 isolated from the direction contacts;

 b) providing the pointing device with a bridging contact that is responsive to the external force applied by the user for bridging together at least one of the direction contacts with the common contact unit in
15 accordance with magnitude and direction of the external force;

 c) detecting connected and disconnected states of the direction contacts with the common contact unit;

 d) determining a net X vector component and a net
20 Y vector component in accordance with the connected and disconnected states of the direction contacts as detected in step c);

 e) selecting a scaling factor based on the number of the direction contacts that were detected in step
25 c) to be in the connected state, the scaling factor increasing in magnitude with the number of the direction contacts detected to be in the connected state;

f) multiplying each of the net X vector component and the net Y vector component by the scaling factor to obtain x and y displacement values, respectively; and

5 g) generating cursor control signals based on the x and y displacement values obtained in step f) for repositioning the cursor on the display screen.

2. The method according to Claim 1, wherein the pointing device is provided with eight of the direction contacts that are angularly spaced apart from each other.

3. The method according to Claim 2, wherein:

the scaling factor is equal to 1 when the number of the direction contacts detected to be in the connected state ranges from 1 to 3;

15 the scaling factor is equal to 2 when the number of the direction contacts detected to be in the connected state is equal to 4;

the scaling factor is equal to 3 when the number of the direction contacts detected to be in the connected state is equal to 5; and

20 the scaling factor is equal to 4 when the number of the direction contacts detected to be in the connected state is equal to 6.

4. A pointing device for controlling movement of a cursor on a display screen in response to an external force applied by a user, said pointing device comprising:

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a plurality of switch contacts including a set of direction contacts that are electrically isolated from each other and that respectively have an associated direction, and a common contact unit that is electrically isolated from said direction contacts;

a bridging contact responsive to the external force applied by the user for bridging together at least one of said direction contacts with said common contact unit in accordance with magnitude and direction of the external force; and

a processing unit connected electrically to said switch contacts on said substrate, said processing unit

detecting connected and disconnected states of said direction contacts with said common contact unit,

determining a net X vector component and a net Y vector component in accordance with the connected and disconnected states of said direction contacts as detected by said processing unit,

selecting a scaling factor based on the number of said direction contacts that were detected by said processing unit to be in the connected state, the scaling factor increasing in magnitude with the number of said direction contacts detected to be in the connected state,

multiplying each of the net X vector component and the net Y vector component by the scaling factor to obtain x and y displacement values, respectively, and

generating cursor control signals based on the x and y displacement values for repositioning the cursor on the display screen.

5 5. The pointing device of Claim 4, further comprising a substrate formed with said switch contacts, and a press button adapted for receiving the external force applied by the user, said press button being disposed adjacent to said substrate and being provided with said bridging contact.

10 6. The pointing device of Claim 5, wherein said press button defines a button axis transverse to said substrate,

each of said direction contacts including a trunk section that extends in a respective radial direction relative to the button axis, and at least one branch section that extends in a circumferential direction relative to the button axis and that intersects said trunk section,

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said common contact unit including a central ring portion co-axial with the button axis, and a plurality of angularly spaced apart trunk portions that extend radially from said ring portion, each of said trunk portions being disposed between a respective adjacent pair of said direction contacts, said common contact unit further including a plurality of branch portions, each of which extends in a circumferential direction relative to the button axis and intersects a respective

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one of said trunk portions.

7. The pointing device of Claim 6, wherein said substrate is formed with eight of said direction contacts.

8. The pointing device of Claim 7, wherein:

5 the scaling factor is equal to 1 when the number of said direction contacts detected to be in the connected state ranges from 1 to 3;

 the scaling factor is equal to 2 when the number of said direction contacts detected to be in the connected
10 state is equal to 4;

 the scaling factor is equal to 3 when the number of said direction contacts detected to be in the connected state is equal to 5; and

 the scaling factor is equal to 4 when the number of
15 said direction contacts detected to be in the connected state is equal to 6.

9. The pointing device of Claim 5, wherein said press button is mounted operably on said substrate, and said bridging contact is a conductive carbon film that is
20 spaced apart from said switch contacts so as not to touch said switch contacts when the external force is not applied on said press button.